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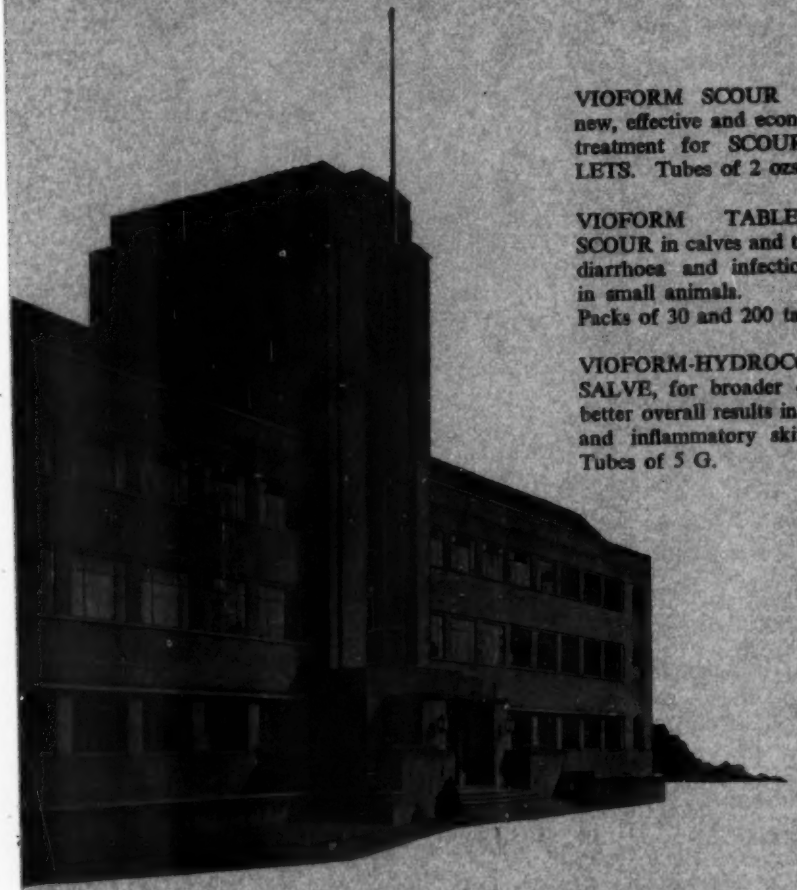

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Internal Fixation of the Fractured Lateral Humeral Condyle*

BY

GORDON C. KNIGHT

Royal Veterinary College, London

THE conformation of the distal extremity of the dog's humerus is such that more weight appears to be borne by the lateral condyle than the medial. Examination of the bone shows the medial articular area to be largely oblique at an angle of about 45° with the long axis of the shaft, while the lateral area has no such obliquity. Viewed from both the anterior and posterior aspects it is remarkable how the shape of the articular surfaces, the greater overall width of the lateral condyle, the presence of the supratrochlear foramen, and the comparative greater thickness of bone forming its medial arch, all clearly point to what seems to be a faulty design and the tendency there must be for any excessive force directed dorsally to separate the condyles. In fact this tendency, as shown by the commonly occurring fracture, splits the condyles into two approximately equal parts. At the same time, that part of the shaft forming the arch of the supratrochlear foramen, fractures near the apex of the foramen. Thus the lateral condyle is free and dislocated upwards by the activating force, the dislocation being maintained by the radius and ulna.

The fracture is known to occur in dogs of any age, perhaps more frequently before maturity, when some undue stress is suddenly transmitted upwards in the direction of the long axis of the radius.

The history of the injury is often very clear and there have been instances in which a dog has been known to climb a gate or a wall then jump down taking weight on both forelimbs with the result that the lateral condyles of both humeri have been separated from the remainder of the bone.

Such a weight-bearing fracture is one of the most permanently incapacitating a dog can suffer. Some fractures in dogs involving the shaft of a long bone, even with considerable displacement, will end in gross mal-union but lameness would be difficult to detect on account of the compensatory action of forelimbs. The lateral condyle of humerus fracture, unless reduced and adequately maintained in reduction, will probably mean a virtually or very nearly virtually functionless limb.

The diagnosis of the injury can usually be made without much difficulty by reason of the history and the visual and palpable symptoms, but X-ray examination in the lateral and antero-posterior planes is essential (see Figs. 1, 2, and 3).

The delay between injury and the animal reaching the veterinary surgeon is often the material factor influencing the outcome, but however soon the dog with a condylar fracture of the humerus is presented after injury, conservative methods of treatment, *i.e.* closed reduction and extension, is most unlikely to prove successful. In fact there are few fractures of any sort in dogs in which the conservative methods of fracture treatment in man can be applied with comparable benefit.

The humerus lateral condyle fracture needs open reduction and internal fixation. If, however, the animal is very young and the bone soft, it is improbable internal fixation will be successful. If, on the other hand, the bone is fully developed and the case presented for treatment within a few days of accident, the optimum time being at about two days, successful operation is easily possible.

Open reduction of the fracture requires first a deep plane of general anaesthesia. The animal is placed in a laterally recumbent position, the operation site having had routine preparation. A vertical skin incision is made immediately over the lateral epicondyle and must extend from about the upper limit of the supratrochlear foramen. The radial nerve

* Paper presented to a joint meeting of the Central Veterinary Society and the South-east Metropolitan Orthopaedic Club on April 2nd, 1959.

and larger blood vessels in the situation are well anterior to the incision. Exposure of the fracture site involving the supratrochlear foramen is essential and will almost certainly require some incision from the epicondyle upwards through the ventral border of the lateral head of the triceps muscle. When adequate exposure has been made the fracture site must be thoroughly cleared of soft tissue and the fractured fragment mobilised to an extent which will allow access to the condylar fracture site itself in order that this too may be cleared and the complete reduction of the fragment facilitated.

When this reduction has been achieved, the adequacy being judged by palpation and the appearance of the visible fracture site, the fragment can be maintained in position by an assistant putting pressure in the right direction with a bone awl, if necessary directed into a small hole drilled for the purpose. In some circumstances a suitable clamp may be used. If the displacement of the fragment has been carefully and properly reduced, pressure with a bone awl will be adequate. The object is then to drill through both condyles from the lateral to the medial aspect. Accuracy is essential and the drill should be made to enter at a point from about 0.5 to 1 cm. posterior to the lower extremity of the epicondyle. A few moments' examination of a specimen humerus before the operation is strongly recommended as an aid to the correct positioning of the drill.

Drills matched to standard Sherman screw size are available and the original drilling is made through both condyles. A second drilling through the fractured fragment is then made slightly oversize in order that it should be in relation to the screw. A fully threaded screw of sufficient length just to pass through the periosteum of the medial condyle is then driven in. The oversize drilling of the lateral fragment prevents its riding up as the transfixion screw is driven in. Temporarily, the screw head is largely responsible for maintaining the fragment in position, but osteoid tissue in due course begins to occupy the thread of the screw. Thus in my opinion there is an advantage in using the fully threaded screw.

Closure of the soft tissues incisions is only a matter of routine but parenteral antibiotic treatment is advised in spite of all the aseptic precautions which have been taken.

This simple transfixion screw internal fixation has been found to give a reasonable percentage of success in cases where mechanical difficulties, *i.e.* firm malunion and immaturity of bone did not predispose failure.

The Rush-type pin is an alternative means of internal fixation and might be employed with advantage in the comparatively rare but certainly extremely difficult humeral fracture where both condyles are separated from the shaft.

Changes in the Coeliaco-mesenteric Ganglia of Horses Affected with Grass Sickness and of Horses Affected with Some Other Diseases

BY

A. BROWNLEE

Agricultural Research Council, Field Station, Compton, Berks.

SUMMARY.—(i) *Changes were found in the coeliaco-mesenteric ganglia of* 11 *acute cases and* 8 *subacute cases of grass sickness in horses.*

(ii) *Changes similar to those found in subacute grass sickness cases were also found in* 3 *out of* 15 *control horses.*

(iii) *Large vacuoles similar to those previously described as occurring in the spinal ganglia of normal sheep and rabbits were found in the coeliaco-mesenteric ganglia of* 5 *horses only* 2 *of which were grass sickness cases and one was a normal animal.*

HOLMAN, Gordon and Pattison (1944), Obel (1955) and Mahaffey (1959) have all found degenerative changes in neurons of the coeliaco-mesenteric ganglia of horses affected with grass sickness; Obel and Mahaffey also found such changes in a wide range of other sympathetic ganglia. The authors of the first paper did not stress these changes as being important, the author of the second considered them to explain the severe clinical course with its marked resistance to all therapy and the author of the third regarded them as "almost certainly the essential lesions of this disease." Mahaffey did not find such changes in horses suffering from chronic nephritis, chronic enteritis and wasting.

The publication of the third paper prompted the present author to re-examine material, from grass sickness cases and from controls, which had been collected in 1948 at knackers-yards in south-west Wales.

Materials and Methods

Tissues from the coeliaco-mesenteric ganglia were fixed in formol-saline and stained by haematoxylin and eosin. They were taken from the horses designated in the table.

Number of cases	Cause of death
11	Acute grass sickness
8	Subacute grass sickness.
6	Ragwort poisoning
1	Tetanus (so reported)
1	Acute illness of undetermined aetiology
4	Accident or lameness (destroyed)
1 (A) (aged)	Tumour obstructing small intestine (destroyed)
1 (B) (20 years of age)	Chronic peritonitis (destroyed)
1 (C) (3 years of age)	Enteritis and thickening of small and large intestine (destroyed)

GORDON C. KNIGHT—INTERNAL FIXATION OF THE FRACTURED LATERAL HUMERAL CONDYLE

FIG. 1.—Labrador. Male. 4 months. Four-day-old fracture of the lateral condyle left humerus.

FIG. 2.—Same dog. Immediately after open reduction and transfixion screwing.

FIG. 3.—Same dog. 54 days after operation and immediately prior to removal of the screw. Dog almost sound.

A. BROWNLEE—CHANGES IN THE COELIACO-MESENTERIC GANGLIA OF HORSES AFFECTED WITH GRASS SICKNESS and of Horses Affected with Some Other Diseases

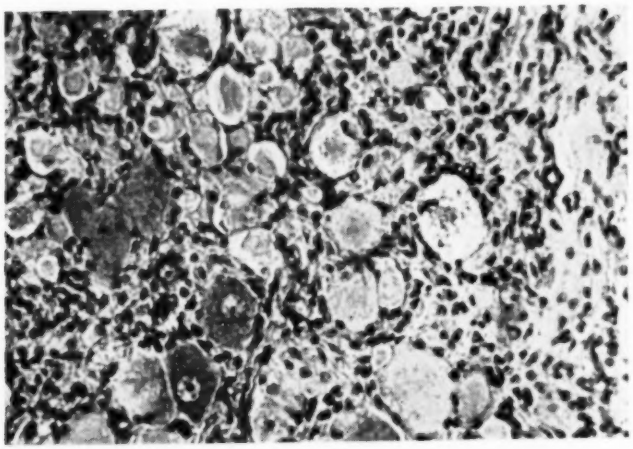

FIG. 1.—Coeliaco-mesenteric ganglion from subacute grass-sickness case. H. & E. ×250.

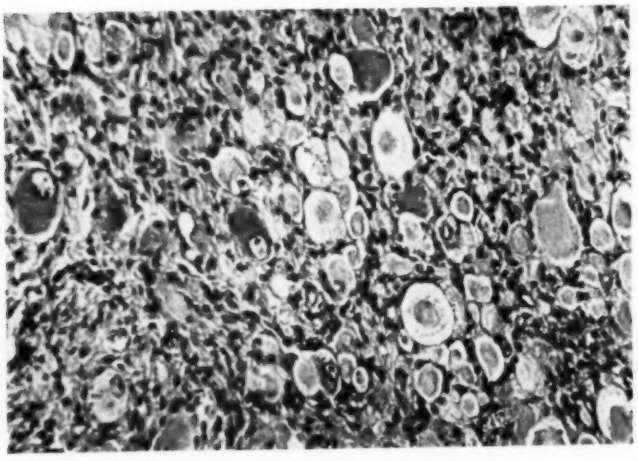

FIG. 2.—Coeliaco-mesenteric ganglion from Case B (see Table). H. & E. ×250.

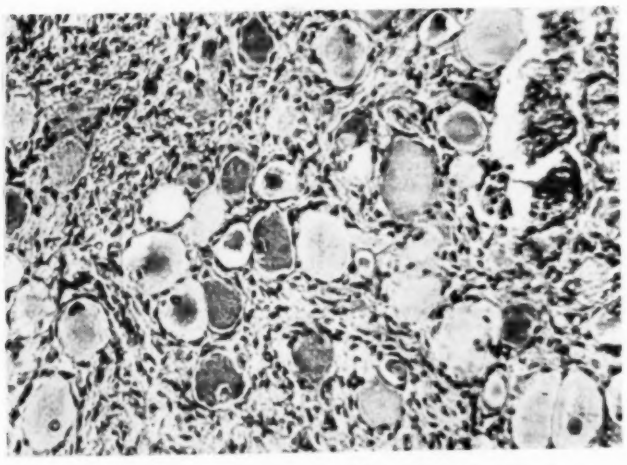

FIG. 3.—Coeliaco-mesenteric ganglion from Case C (see Table). H. & E. ×250.

The term "subacute" is used in this paper in preference to the term "chronic" as used by Obel and by Mahaffey.

Results of Histological Examination

All the acute cases of grass sickness showed numbers of degenerated neurons varying from about 23 per cent. to about 90 per cent. of those seen in the sections. These neurons all showed changes similar to those described by Obel, namely smooth outer contour, disintegration of the Nissl substance, eosinophilic staining, appearance of numerous very small vacuoles in the cytoplasm of many neurons and a varying degree of pyknosis of the nucleus.

All the subacute cases showed numbers of degenerated neurons ranging from about 20 per cent. to about 80 per cent. of those seen. Here the changes were more varied. Some few neurons were similar to those found in the acute cases except that the characteristic fine vacuolation was less marked or absent; others showed varying degrees of shrinkage, some with a disintegrating, peripheral network formation; others were further shrunken into a small rounded eosinophilic body.

The ragwort poisoning cases, the case of tetanus, the case of acute illness of undetermined aetiology and the cases destroyed because of accident or presence of lameness showed the neurons to be normal or nearly so.

Cases A, B, and C showed changes in neurons similar to those found in the subacute cases of grass sickness with, in each, about 50 per cent. of the neurons abnormal. Micro-photographs of preparations from a coeliaco-mesenteric ganglion of a subacute grass-sickness case and of cases B and C are shown (see Figs. 1, 2 and 3).

Large vacuoles, similar to those found in the spinal ganglia of normal and scrapie-affected sheep by Brownlee (1940) and in the spinal and the Gasserian ganglia of the normal rabbit by Field (1952), were found in small numbers in the coeliaco-mesenteric ganglia of 5 horses—2 grass sickness cases, 1 with a broken leg, 1 with a tumour and 1 dead from undetermined cause.

Discussion

The findings here recorded appear to correspond with those found by Obel and by Mahaffey except that cases A, B and C showed changes similar to those found in subacute grass sickness whereas Mahaffey did not find such changes in his control material. The approximate interval between death and the fixation of the material from these 3 horses was 4 hours, 1 hour, and 2 hours respectively, so there is little reason to believe that the changes occurred *post-mortem*; in each case apparently healthy cells were found alongside degenerated ones. Besides, Pribor (1956) found that in dogs and cats *post-mortem* changes appeared to progress more slowly in the neurons of the autonomic ganglia than in the neurons of the central nervous system. One grants that these 3 animals were obtained from an area where, and at a time when, grass sickness cases were occurring, but the likelihood of their being in the incubative stages of the disease is small and, besides, cases A and B were aged horses.

The present findings agree with those of Obel in that she reported the changes in the ganglion neurons to be as extensive in subacute as in acute cases of grass sickness; so, when we consider that the severity of the symptoms differs greatly in the 2 types of case, it seems unjustified to accept her hypothesis that neuron changes explain the syndrome. Besides, in so far as one can put weight on the findings of the very limited examination of the ganglia from each individual animal dealt with in this paper, there appear to be much wider differences in the numbers of damaged neurons observed in animals within the acute-case group and also within the subacute-case group than would be expected on such a hypothesis.

It has been reasoned that the bowel stasis can be interpreted as being due to a sympathicotonia (Greig, 1928) or, alternatively, to a depression of the parasympathetic. Obel, in addition to finding changes in sympathetic neurons, did find in grass sickness cases degenerated neurons in the Auerbach's plexus (parasympathetic) but did not regard these latter as more numerous than can be considered normal; nevertheless this finding does confuse the picture. Obel also refers to the finding by v. Hein (1952) and by Köhler and v. Hein (1953) of degenerative changes in the intramural ganglia in cases of colic. These authors considered the changes to follow the attack of colic and not to be its cause.

Obel's concept of grass sickness, intractable to all treatment, being associated with destruction of neurons in the nerve supply to the gastro-intestinal tract is certainly attractive and deserves further investigation. It appears now to have been established that degeneration of neurons in the sympathetic ganglia is associated with the grass sickness syndrome but whether this change is primary or secondary is still undetermined.

Acknowledgment.—I am indebted to Mr. F. Summerfield, A.R.P.S., for preparing the photographs.

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CONGRESS DISCUSSIONS

Congress delegates who took part in discussions from the floor, and who have not yet sent their contributions to the Editor, are asked to do so immediately as the official Proceedings are being finalised for press.

Transfer of Iodine-131 and Strontium-89 from Diet to Milk in Cattle

BY

R. J. GARNER and B. F. SANSOM

Radiobiological Laboratory, A.R.C. Field Station, Compton

SUMMARY.—From 0.17 to 3.9 per cent. (mean 0.81 per cent.) of carrier-free ^{89}Sr and from 1.3 to 13.1 per cent. (mean 5.0 per cent.) of carrier-free ^{131}I can be recovered from the milk of cows during the 6 days following a single oral dose. The variations in recovery of ^{89}Sr can be accounted for by differences in milk yield. The factors controlling the secretion of ^{131}I into milk are not fully understood.

Introduction

IN the event of environmental contamination with fission products the human and animal population would face danger of two kinds (i) external irradiation from radioactive material in the air or deposited on the ground and on the skin (ii) internal irradiation from active material which had found its way into the body. The two principal routes of entry into the body are by inhalation and ingestion. One possibly dangerous component of the human diet is cow's milk.

Because of its grazing habits a cow at pasture may collect contamination from a large area and so ingest significant amounts of potentially dangerous radioactive material. Some of this may be absorbed from the gastro-intestinal tract and secreted in appreciable amounts into the milk. Preliminary experiments with mixed fission products collected from trials of nuclear weapons showed that isotopes which are transferred to a significant extent from the diet of a cow to its milk are those of tellurium, iodine, strontium, barium and caesium. Of these, iodine-131 (^{131}I) and strontium-90 (^{90}Sr) are particularly dangerous. Iodine-131 accumulates in the thyroid gland where it can cause local damage; radioactive strontium is taken up by the skeleton and can give rise to bone cancer or leukaemia.

A preliminary account of the transfer of iodine-131, strontium-89, tellurium-132, ruthenium-106 and barium-140 from the diet of cows to their milk has been given by Squire, Middleton, Sansom and Coid (1957). The secretion of radio-strontium and iodine into milk has also been reviewed by Comar and Wasserman (1956). In the present paper an attempt is made to summarise the present state of knowledge of the transfer of iodine-131 and strontium-89 to milk.

Strontium-89

Although ^{90}Sr is the most dangerous radioactive isotope of strontium, all the experiments at Compton have been carried out using ^{89}Sr. The latter isotope is used more often in experimental work because it is less hazardous owing to its shorter half-life. The two isotopes behave identically chemically and results obtained with ^{89}Sr are equally applicable to ^{90}Sr when allowance is made for radioactive decay.

Single-dose experiments. In 22 single-dose experiments in which approximately 1 mc. pile-produced, carrier-free ^{89}Sr was administered orally, 0.17 to 3.9 per cent. (mean 0.81 per cent.) of the ^{89}Sr administered was recovered from the milk in 6 days. Much of this variation can be attributed to differences in milk yield. Fig. 1 shows the percentage of the dose recovered in 6 days plotted against the total milk yield during this period. There is a good correlation between percentage recovery and yield.

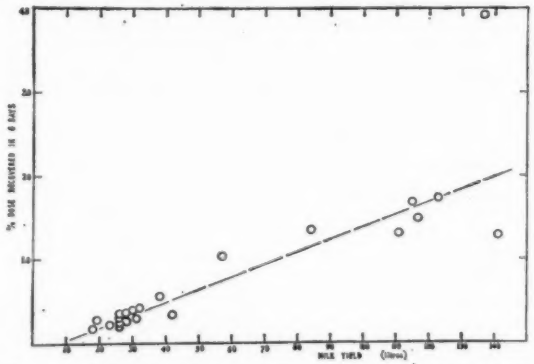

FIG. 1.—Relation between percentage of an oral dose of ^{89}Sr recovered from the milk in the 6 days following administration and the total milk yield in that time.

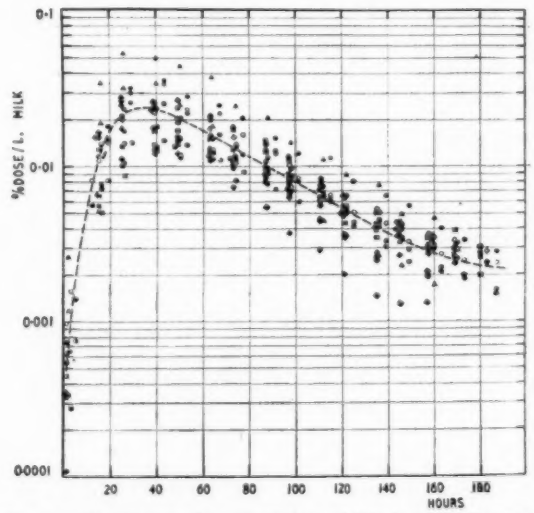

FIG. 2.—The change of concentration of ^{89}Sr in the milk after a single oral dose. Each symbol represents an individual animal; the broken line has been plotted by averaging the individual results. Correction has been made for radioactive decay.

In Fig. 2 the concentration of ^{89}Sr in the milk (expressed as a percentage of the amount administered per litre of milk) has been plotted against the time after dosing for 20 individual cows. There is a fairly slow rise in ^{89}Sr concentration to a maximum at 30 to 36 hr. The concentration in the milk 6 days after dosing is still approximately 15 per cent. of the highest value. Very similar results have been obtained with ^{90}Sr in cows (Comar & Wasserman, 1956) and in goats (Ekman, 1958). The biological half-time in milk is estimated to be rather less than 2 days. Horstmann, Selders, Nicholson, Hungate and Bustad (1957) found the half-time of ^{90}Sr in ewe's milk to be 1.5 to 2 days and a similar value for ^{90}Sr in goats' milk may be inferred from the data of Ekman (1958).

Continuous ingestion. Comar and Wasserman (1958), from experiments involving the daily feeding of ^{90}Sr and from calculations based on results from single doses, consider that a cow maintained on a normal ration (providing a daily intake of 25 g. calcium) and continuously ingesting ^{90}Sr can be expected to secrete into the milk 0.2 per cent. per litre of the ^{90}Sr ingested daily. Increasing the daily calcium intake to 100 g. in their experiments reduced the output to 0.13 per cent. of the daily intake per litre of milk.

A similar method of calculation applied to the single dose results obtained at Compton, where the experimental animals are estimated to receive 70 to 80 g. calcium daily, gives the much lower mean figure of 0.08 per cent. per litre.

It can be estimated from both sets of data that the time to reach an equilibrium level following daily feeding would be at least 7 days.

Availability of ^{89}Sr from different sources. Two principal methods of feeding have been used in the Compton experiments, (i) the animals were allowed to eat cubes of cattle cake ("dairy nuts") moistened with radioactive solution, (ii) grass, similar to rapidly growing pasture, was sprayed with a solution of carrier-free ^{89}Sr in a specially designed chamber and fed to cows 2 days later. There was no marked effect of the method of administration on the transfer of ^{89}Sr to milk (Table I).

Horstmann *et al.* (1957) found no significance difference in the amounts of ^{90}Sr secreted into the milk of ewes fed either inorganic or plant-incorporated ^{90}Sr.

TABLE I
THE EFFECT OF DIFFERENT METHODS OF ADMINISTRATION ON THE PERCENTAGE RECOVERY OF ^{89}Sr FROM MILK IN 6 DAYS FOLLOWING A SINGLE ORAL DOSE

Animal number	Date	Method of administration	Milk yield (litres)	Percentage ^{89}Sr recovered
Q.42	11.7.57	Cattle cake	28·4	0·36
	25.7.57	Grass	28·7	0·36
S.191	11.7.57	,,	107·3	1·29
	25.7.57	Cattle cake	111·0	1·30
R.601	11.7.57	,,	41·9	0·33
	25.7.57	Grass	39·5	0·36
S.365	11.7.57	,,	23·1	0·19
	25.7.57	Cattle cake	18·4	0·17
	Mean	,,	—	0·54
		Grass	—	0·55

The recovery of ^{89}Sr from the milk of cows fed mixed fission products collected from trials of atomic weapons was of the same order as in cows fed the separated isotope. In 5 experiments using mixed fission products the recovery from milk in 6 days ranged from 0.27 to 1.42 per cent. with a mean value of 0.80 per cent.

Relationship between strontium and calcium secretion into milk. The behaviour of fission products in physiological processes resembles that of other and, possibly, essential elements related to them chemically. Strontium behaves in a very similar manner to calcium and it is therefore informative to study the two elements together.

A discrimination between strontium and calcium, in favour of the latter, during their passage from the diet to the milk has been demonstrated (Comar & Wasserman, 1957; Comar, Russell & Wasserman, 1957). It is usual to express this discrimination in terms of the strontium-calcium observed ratio (OR) which is derived from the expression

$$OR_{\text{Sample-precursor}} = \frac{\text{Sr/ Ca in sample}}{\text{Sr/Ca in precursor}}$$

The $OR_{\text{milk-diet}}$ calculated from various sources lies in the range of 0.09 to 0.16.

Comparison of the cow with other ruminants. Cows secrete less of an oral dose of radio-strontium into their milk than sheep and goats. In sheep receiving multiple doses, Horstmann *et al.* (1957) found that 4 per cent. of a daily dose of ^{90}Sr was eliminated in the milk (approximately equivalent to 4 per cent. per litre of milk) and Wasserman, Lengemann and Comar (1958), in trials in goats, reported that of the ^{89}Sr administered daily, 1 per cent. per litre was secreted into the milk. In both cases the difference may be related to the volumes of mlik produced by the different species.

Iodine-131

Single-dose experiments. Following a single oral dose of carrier-free ^{131}I in the form of iodide in solution, ^{131}I appeared in the milk within 30 minutes, reached its maximum concentration about 12 hours after administration and subsequently declined, at first with a half-time of about 15 to 20 hours and then more slowly, until it was only 1 to 2 per cent. of its highest value 6 days after dosing (Fig. 3). There is a delayed release of activity after 6 days which is not shown on the graph. This probably corresponds with the release of iodine from the thyroid gland.

Essentially similar results have been obtained in other studies with cows (Glascock, 1954; University of Tennessee, 1955).

Only minor differences were observed in the time course of secretion between different cows but the proportion of a single dose eliminated in the milk over a fixed period was found to be extremely variable. In a series of 20 experiments carried out at Compton in which approximately 1 mc. of carrier-free ^{131}I was administered as a single oral dose,

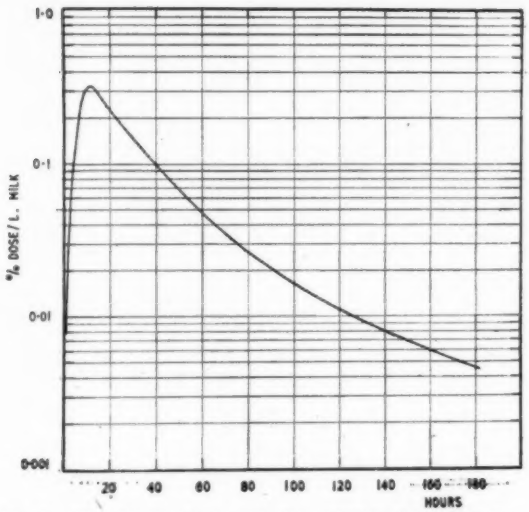

FIG. 3.—The change of concentration of ^{131}I in the milk following a single oral dose. The curve has been plotted by averaging the results of 20 experiments. Correction has been made for radioactive decay.

1.3 to 13.1 per cent. (mean 5.0 per cent.) was secreted into the milk during the course of 6 days. The Tennessee workers found an equally wide variation, reporting a recovery of 3.9 to 16.4 per cent. of an oral dose in the milk over a 7-day period. Possible reasons will be discussed later.

Multiple-dose experiments. Lengemann and Swanson (1957) used daily oral doses of 1 mc. ^{131}I to simulate conditions of prolonged exposure and found that, in 2 animals examined in February, equilibrium conditions were reached after about 6 days when 4.7 and 9.4 per cent. of the daily dose appeared in the milk each day. The cow eliminating 4.7 per cent. daily was re-examined in late April and was then secreting 13.6 per cent. of the daily dose in each day's milk, equilibrium having been reached in 11 days. These animals had previously been used for single dose experiments and had eliminated 6.6 and 6.0 per cent. of the dose in the 7 days following administration. For this and other reasons, Lengemann and Swanson concluded that no simple formula could be applied to extrapolate data from single dose trials to conditions of continuous ingestion.

From experiments at Compton in which 100 μc. ^{131}I was administered to 4 cows each day for 14 days, it was found that the equilibrium concentration in the milk was approximately 60 per cent. of that which would be predicted from the single dose experiments mentioned above, averaging 0.32 μc. per litre instead of the predicted 0.50 μc. per litre. The reason for this is not fully understood. Equilibrium conditions were reached after approximately 6 days.

Availability of ^{131}I from different sources. The biological availability of ^{131}I from mixed fission products was found to be slightly, but probably not significantly, lower than that of carrier-free ^{131}I as iodide in solution. In 5 experiments with mixed fission products the recovery from milk in 6 days ranged from 0.80 to 6.3 per cent. with a mean value of 3.3 per cent.

Pilot experiments suggest that the availability of elementary iodine deposited on herbage is the same as that of iodide.

Factors affecting the secretion of ^{131}I into milk. Lengemann, Swanson and Monroe (1957) attempted to study the effect of the stage of lactation, level of production and season of the year on the amount of ^{131}I appearing in the milk and on the ability of the mammary gland to concentrate ^{131}I into milk. They reported that, as the season advanced from late winter to early summer, a change occurred in the metabolism of iodine by the dairy cow, the influence of season being so pronounced as to obscure the possible effects of other factors. With the onset of spring the concentration of ^{131}I in the milk increased and this was ascribed by Lengemann *et al.* (1957) to the reduced requirement by the thyroid gland releasing more ^{131}I for secretion into milk and later, during the spring to summer period, to the active

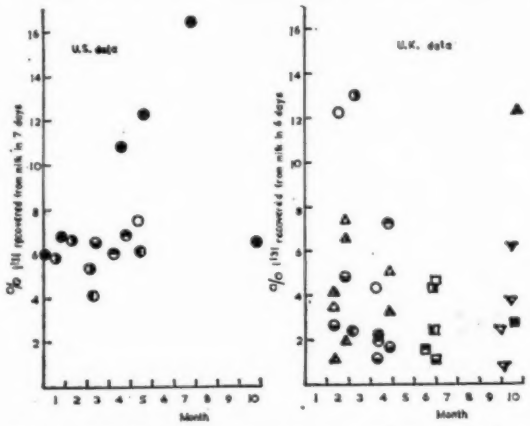

FIG. 4.—Relation between percentage of ^{131}I recovered from milk following a single oral dose and the time of year. A. From published data of Lengemann *et al.* (1957). B. Compton results. Each symbol represents an individual animal.

concentration of ^{131}I by the mammary gland. As mentioned above, Lengemann and Swanson (1957) also found an increase in the proportion of a daily dose of ^{131}I secreted into the milk of a cow examined in late April as compared with February.

Fig. 4 shows (a) a graph constructed from the published data of Lengemann *et al.* (1957) and (b) the results obtained in all experiments involving ^{131}I carried out to date at Compton (including those published by Squire *et al.* 1957) plotted against time of year. In the case of Compton cows there is no evidence for a seasonal effect on the proportion of a single dose of ^{131}I eliminated in the milk. Neither are the data of Lengemann *et al.* when so presented, particularly convincing.

There has always been some controversy with regard to seasonal variations in the content of stable iodine in milk. Remington and Supplee (1934) and Hanford, Supplee and Wilson (1934) found the iodine

content to be lowest from April to September and to exhibit a peak value from October to March. The variation was independent of the diet. The results obtained at Compton tend to support these observations; experimental cattle at Compton are maintained on the same diet (hay and dairy nuts) throughout the year. Matthews, Curtis and Mayer (1939), on the other hand, in cows receiving continuous iodine supplements, observed a marked decrease in the milk iodine during the changes of season, from spring to summer and from summer to autumn, simultaneously with the feeding of abundant pasture. Matthews *et al.* considered that some factor other than the iodine intake must be involved to explain these variations.

No work has been carried out at Compton on the effect of carrier iodine on the secretion of ^{131}I in milk. From the results of Lengemann and Swanson (1957) it would seem that, in cows receiving adequate amounts (the normal requirement is considered to be 400 to 800 μg. per day in a 1,000 lb. cow producing 40 lb. milk daily), massive doses of stable iodine have to be given before any significant effect is observed. In one cow, supplementing the normal daily intake of 15 mg. by 2 g. iodine (as NaI) depressed the percentage of a daily oral dose of ^{131}I appearing in the milk from 4.4 to 3.3 and, in a second animal, 4 g. brought about a decrease from 9.4 to 4.5 per cent.

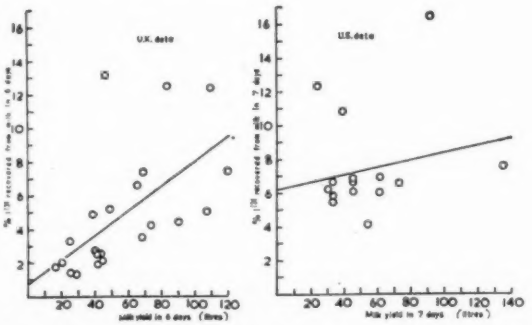

FIG. 5.—Relation between percentage ^{131}I recovered from milk following a single oral dose and the total milk yield. A. Compton results. B. From published data of Lengemann *et al.* (1957).

Squire *et al.* (1957) demonstrated a correlation, significant at the 5 per cent. level, between the percentage of an oral dose recovered in 6 days and the total yield of milk in that time. Fig. 5 shows (a) their graph replotted to include all data now available and (b) the published results of Lengemann *et al.* (1957) plotted in the same way. Lengemann *et al.* conclude that the amount of milk produced had no clear-cut effect on the amount of ^{131}I secreted into the milk. It is interesting to note that this differs from the earlier conclusion of this group that "the percentage of an oral dose of ^{131}I appearing in the milk depends entirely upon how much milk is produced" (University of Tennessee, 1954).

Neither the results obtained at Compton nor in the U.S. indicate an effect due to the stage of lactation, except perhaps through its influence on milk yield.

Comparison of the cow with other ruminants. Considered as a machine for the transfer of ^{131}I from its diet to its milk the dairy cow seems to be the most inefficient of the ruminants. Wright, Andrews and Christian (1955) found in goats that 31.2 to 53.5 per cent. of ^{131}I administered orally was eliminated in the milk in 7 days. Bustad, Herde, Warner and Kornberg (1951) recorded that, in ewes fed daily doses of ^{131}I, the total activity each day in the milk could be as high as one third of the daily ^{131}I intake.

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THE WILLIAM HUNTING AWARDS

May we draw the attention of new and recent graduates to these Awards, presented annually to honour the memory of the first Editor of this journal? One Award, comprising a silver medal and a cheque for £25, is restricted to the best clinical paper by a veterinary surgeon *qualified less than 5 years.* It is hoped that younger members of the profession will offer papers for publication.

The Clinical Specialist

BY

R. F. W. GOODWIN

Department of Veterinary Clinical Studies,
University of Cambridge

THE absorption of the veterinary teaching schools into the University system has stimulated a fresh interest in the evolution of veterinary education in Britain, and the urge to make the most of these new opportunities occupies the minds of many teachers in the profession. In all disciplines there have been experiments in teaching but it is in the clinical departments, perhaps, that the greatest changes and improvements can yet be brought about. For a number of years, the writer has been exploring various developments in veterinary medicine and, as a result of this, has formed several broad opinions on the rôle of the clinician in veterinary science. In the hope that these experiences and views may stimulate debate in this important field, they are now summarised under the headings of training, specialisation and research.

In discussing the future in veterinary medicine, many parallels can be drawn with human medicine. But it is important to remember that veterinary science has its own future and also its own problems, for many of which the solutions will be delayed if the pattern of the medical profession is copied slavishly. The remarks that follow are based almost entirely on veterinary medicine as it affects the clinician in the teaching schools or, possibly, in research institutes. They do not apply to general practice; nor are they directly transferable to veterinary surgery, although some of the principles stated might bear upon surgery also.

Training

Scientific Training

The basic training of the veterinary clinical teacher must be in scientific principles and the best training for this is in working for a post-graduate research degree. It is difficult to acquire later the scepticism and objectivity of the scientist, and clinical effort is often wasted unless from the beginning it is made with the highest standards of scientific investigation. It is strange that this need for fundamental training has been largely ignored in the past, when it has been accepted as desirable for teachers in pre-clinical subjects and laboratory workers generally. The veterinary student progresses through the various layers of veterinary science being instilled with the importance of demanding the evidence until, on reaching his final terms, he is often presented with a great deal of authoritarian teaching and clinical writing that could not withstand true enquiry. There would seem to be no reason why clinical subjects should not be governed by the same rules as those of the pre-clinical years, or why the summation and integration of all the earlier disciplines should be freed from the otherwise accepted principles of adequate proof. Refusal to tolerate impressions and, where applicable, uncontrolled observations in clinical medicine would confer great benefits not only in the veterinary schools but in the medical schools, where the clinician has likewise tended more to dogmatism.

As to the subject chosen for study during the first post-graduate training, this need not be immediately related to the sick animal; for, above all, it is the training that matters. Enlightened scepticism without practical application is preferable at this stage to pseudo-scientific clinical work. But within this general proposition there is much to be said for a training connected with the whole animal rather than the test-tube, and the subject of physiology, in its widest sense, seems a pre-eminent choice. Much of the knowledge gained in physiological research can be applied to medicine, while veterinary medicine lends itself more fully to experimental studies than human medicine. It is, perhaps, the paramount obligation to the patient that has hindered the application of scientific principles to human clinical medicine, and the relatively enormous opportunities for experimentation in the veterinary field should be seized and exploited.

Clinical Training

Thereafter, the embryo clinician has no substitute for experience, and facilities must be created whereby veterinary clinicians can gain extensive experience of the sick animal. These facilities will be advanced by the growth of specialisation, which is referred to later, but it is important that the clinical experience so gained is related to facts and not impressions. It is only too easy to forego scientific standards, albeit unconsciously, at the clinical level and the clinician must ask himself repeatedly whether he is guilty of intellectual dishonesty. In the past, the art of veterinary medicine has figured as prominently as the science, and the clinician must take care not to delude himself that art has a special meaning in his subject. If by "art" is meant "judgment in assessing factual information" then there is art in everything from anatomy to chemical-pathology, but much of what has been called art in medicine would be called unwarranted assumption in the pre-clinical subjects. The need to guess will be greatest when the facts are most obscure. All the means available, therefore, should be used to ascertain the facts and in a modern veterinary school, with specialised equipment and a variety of specialists as colleagues, the clinician has enhanced opportunities for determining the true facts of disease. If this is to be done, however, the amount of clinical material handled must be restricted. Just as the workers in other subjects would be stultified by an excess of routine examinations, so can the clinician be overwhelmed by

patients. This indispensable clinical experience, therefore, must be sufficient; but not so excessive that few cases can be adequately examined. The ever-present danger is that the flow of clinical material will make such demands upon the clinical teacher's time that he gains little of permanent value from his experience. This is one of the main arguments for ruling out general practice as a preferred training ground for clinical teachers. It may be that, hitherto, it has not been possible to gain comprehensive clinical experience in the veterinary schools but some veterinary teachers, in both medicine and surgery, are now amassing as much precise data as their consultant counterparts in human medicine.

Specialisation

In all fields of science the frontiers of knowledge are extending further and faster. Keeping abreast of the published work in even a well-defined subject has become a major task: keeping abreast of the developments in medicine in all the species of the veterinary curriculum is no longer possible for any one man. Either the clinician must offer a diffuse, out-dated knowledge on a variety of species or he can attempt to keep himself abreast of modern thought in some limited aspect of medicine. It is clear, therefore, that a division of the medical field must be made among clinicians and the argument then centres on how this may be done.

Specialisation by Systems

It is unlikely that specialisation in veterinary medicine will ever reach the degree obtaining in human medicine; the economic factors governing veterinary practice would intervene. There is insufficient demand for many of the specialities followed in human medicine and some specialities, such as those concerned with the growing burden of mental illness, find no place at all. Specialisation in very limited sectors of veterinary medicine, therefore, will be more likely to be undertaken out of scientific interest than from necessity. It is still possible, however, to specialise in two main ways: first, on a systematic basis and, secondly, on a species basis. In the first instance—specialisation across the species, as in neurology or dermatology—there are obvious advantages. These include a more limited approach and, almost inevitably, a higher degree of specialisation. Furthermore, there is more affinity between systems than between all the ills of a single species. Nevertheless, an immediate disadvantage is that it is often not clear which system is primarily affected and the alimentary system provides an excellent example of this problem of complex aetiology. Disturbances in alimentary function are common to a wide range of diseases, especially among the farm animals, and a specialist in this particular field would rarely be the person best equipped to determine the primary aetiology. Although systematic specialisation has a place, therefore, it is the writer's view that species specialisation should precede it, both as a development in medicine and as a requirement for diagnosis.

Specialisation by Species

The problems of the pig industry or the poultry industry, the diseases of cattle, the diseases of small animals, and so on, differ so greatly that often a different approach is called for with each species. Furthermore, disease is becoming increasingly related to management, and it is difficult to advise on disease problems on the farm without being conversant with trends in housing and husbandry, or the over-all aims of the industry. Yet again, many progressive keepers of livestock are anxious to forestall rather than treat disease and there is an increasing tendency to seek specialist veterinary advice on the establishment, planning and running of a farming enterprise. This is a change of thought deserving active encouragement and the systematic specialist is not fitted to advise on the broadest relationships between disease and management or on the relative economic benefits of different courses of action. Finally, as has been mentioned earlier, the problem as presented by the practitioner is so often a species one for which the answer may lie in fields ranging from virology to parasitology, or nutrition to genetics. All these arguments demand, in the first instance, a specialist who can handle the species. Thereafter, the clinician might seek the help of other clinicians more conversant with a particular system but, in general, the usual course of action will be to seek the help of the specialised pathologists. Ultimately, however, when all the laboratory findings are available, it is the clinician who must decide their relative significance. Whether the clinician concentrates more on the techniques necessary for detailed examination of the individual patient or upon larger epidemiological procedures will depend on the species concerned. Thus the dog and horse will commonly be presented as individual cases, whereas the difficulties of the poultry and pig industries are more often flock and herd problems.

It is sometimes suggested that specialisation could deprive the teaching schools of clinicians who have a general knowledge of veterinary medicine and, consequent upon this, future professors would be unbalanced in their clinical experience. Such an imbalance is inevitable in the scheme here proposed, but it does not necessarily follow that all specialists must remain ignorant of the main trends of medicine proceeding elsewhere. Indeed, a clinician working in a teaching department where his colleagues are also specialising has every incentive to remain in touch with parallel advances in the related subjects. This argument against specialisation finds little support in nearly all other University departments and it is rare to find a head of a department who is equally conversant with all the facets of his department's activities. A professor of pathology, for example, cannot be expected to be equally experienced in morbid anatomy, virology, bacteriology, parasitology and chemical pathology. Such a phenomenon is possible—but at a low level.

Research

It is well established in the Universities that an

essential duty of a teacher is to advance knowledge in his subject. To a lesser extent, this was accepted by pre-clinical departments in the old veterinary colleges but there appears to have been some disinclination for clinicians to engage in research. Some of the reasons for this have already been discussed: the lack of research training and the possibility of becoming overwhelmed with routine clinical material; but a further reason may reside in the undefined position of the clinician in veterinary research. That, for the sake of the next generation, all teachers should be research workers is difficult to deny and how the clinician can best fulfil this obligation is well open to discussion.

Ample opportunities still exist for the individual scientist to work alone, and despite the increase in team research, many workers in the more fundamental sciences will continue to experiment unaided. In clinical research, however, it is more difficult to continue single-handed for long and the complete investigation of disease requires several divergent skills. Among these skills is the appreciation of the whole animal in disease. That pathologists, virologists and similar specialists often carry out all their own experimental work in the live animal may to some extent be an adverse reflection on clinicians, who have commonly been regarded merely as suppliers of pathological material, but it is likewise possible that it is a slight reflection on themselves. There is a constant need for improved standards in the pathology laboratories, for the best techniques in virology and microbiology, chemical pathology, cytology, etc., and one may wonder whether the reluctance of some pathologists to concentrate on the laboratory and put aside the fact that they qualified as general practitioners may not retard their specialised development. Some division of interest and responsibility would be useful here, and a commonly convenient one is the division between the patient and the laboratory bench. This is not to imply, of course, that there should be little exchange of ideas between the pathologist and the clinical specialist, or rigidly defined spheres of action, but the arguments that apply to specialisation in veterinary medicine apply equally well to specialisation in the laboratory, and the more that the pathologist can safely leave to the clinician the better. The recognition of the clinician as a scientist with a major rôle to play in experimental medicine must be beneficial. Equally so, the clinician stands to to gain enormously from constant discussion with a variety of specialists in pathology. Although he cannot imitate their degree of specialisation without losing his identity as a clinician, he can over a period of years obtain a very wide general knowledge of the ancillary pathological sciences.

The views expressed in this article cannot be final, because veterinary science is in a very fluid stage of development. Nor is it intended that they represent the only line of progress; other experiments in clinical medicine can be readily pursued concurrently. But in the writer's experience this summary indicates some of the main lines of advancement for clinical medicine in the immediate future.

A Technique for Cryptorchidectomy in the Bovine Animal

BY

R. W. Johnston

Subject. Aberdeen-Angus cross bull, 9 months old. Both testicles undescended.

Preparation. The animal was given no food but a limited amount of water for 2 days.

Anaesthesia. Largactil* 250 mg. followed 30 minutes later by 15 ml. pentobarbitone sodium intravenously.

Operation. The animal suspended by the hind legs (see Fig. 1). The abdomen was incised for 2 inches at a site 2 inches lateral to the mid-line and 6 inches below the scrotum. A long inspection light was introduced. Both testicles were clearly seen to be attached to kidney fat. Each in turn was fixed by a long forceps, the cord was ligatured, and the testicle removed. The abdomen was closed with a nylon suture.

Result. Recovery was rapid and complete.

Discussion. Anaesthesia was complete and adequate for the duration of the operation. At no time was it necessary to introduce anything other than a sterile instrument into the abdomen. By this method trauma is reduced to a minimum.

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* Largactil: May & Baker Ltd.

Current Literature

ABSTRACTS

The Case Against B.C.G. ANDERSON, A. S., *et al.* (1959). *Brit. med. J.* June 6th, 1959. Pp. 1,423.

This paper by 17 members of the medical profession, all eminent in their own spheres in the United States of America, presents the evidence on which is based their contention that B.C.G. vaccine is neither so safe nor so effective as is tacitly assumed in many parts of the world.

Since 1882 numerous attempts have been made artificially to produce immunity against tuberculosis. None of these has passed the controversial stage. This is probably because an attack of tuberculosis does not result in a dependable immunity, so the disease is notoriously a relapsing one. The vaccine at present in the ascendancy is the bacillus Calmette-Guérin (B.C.G.), but as good or better results in tuberculosis control have been reported in parts of the world where only fundamental methods have been employed as in other places where B.C.G. has been added.

Statistics are presented which show that in the United States between 1930 and 1956 there was a decrease of 44.9 per cent. in the number of newly reported cases of tuberculosis and that the death rate from tuberculosis fell from 70.2 per 100,000 in 1930 to 8.4 per 100,000 in 1956. Similar reductions in the infection rate in young children are reported. This rapid change in the tuberculosis scene has been achieved without the use of B.C.G. or any other vaccine.

Reference is made to the tests carried out by veterinarians with B.C.G. as a means of eradicating tuberculosis from cattle herds. International organisations dealing with livestock diseases in Europe include the International Office of Epizootics, the World Health Organisation, and the Organisation for European Economic Co-operation, and these bodies are on record as recommending that such products as B.C.G. and vole bacillus be omitted from control programmes designed for eventual eradication of bovine tuberculosis.

The tuberculin test is exceedingly important in differential diagnosis. It determines earlier than any other procedure when tubercle bacilli have invaded the body. But the use of the test as a diagnostic method is lost in persons whose tissues are sensitised to B.C.G. tuberculoprotein. It is impossible to distinguish between tuberculin sensitivity produced by natural infection and that produced by B.C.G. vaccination. Veterinarians throughout the world have reported that B.C.G. vaccination destroyed the value of the tuberculin test as a diagnostic agent of natural infection. The veterinary profession use the tuberculin test as a means of detecting infected animals. A positive tuberculin test indicates the development of sensitivity to tuberculoprotein, it cannot and does not distinguish between sensitivity due to natural infection and sensitivity due to B.C.G. vaccination. The writers go on to point out that a positive tuberculin reaction can be elicited in 95 per cent. of primary pulmonary infiltrate long before the infiltrates have the consistency or are large enough to cast visible shadows on X-ray films.

When B.C.G. is effectively introduced into the layers of the skin it sets up lesions at the site of administration and in the regional lymph nodes. It appears, therefore, that tubercle bacilli of the initial invasion, whether from natural infection or from B.C.G. vaccination take essentially the same course and that all who develop sensitivity to tuberculoprotein whether from natural or B.C.G. infection have primary tuberculosis complexes.

The writers then describe what they term longitudinal observations on persons infected with tubercle bacilli. (Longitudinal is used where long-term is implied.) A 20-year study was made of 2,266 persons who were observed to convert from non-reactors to reactors to tuberculin in adulthood. There was no case in the entire group who acquired primary tuberculous infection in adulthood who developed rapidly progressive fatal disease. The human body defends itself better against first invasions with tubercle bacilli than it does against re-infections. Clinical disease develops only in persons who have been previously sensitised to tuberculoprotein. Accurate differentiation between primary pulmonary infiltrates and re-infection type of clinical lesions is of the utmost importance. Without this, erroneous deductions are made with reference to the efficacy of B.C.G. For example it may be credited with beneficial effects when primary infiltrates are grouped with re-infection type of lesions, so it appears that more control subjects develop clinical disease than those who have primary lesions produced in the skin by B.C.G.

An adequately controlled study of B.C.G. among people living in their own homes has never been accomplished. It has been found impossible. On the other hand protective measures without B.C.G. applied to unavoidably exposed groups have resulted in almost complete control of infection amongst large groups of professional students and nurses amongst whom clinical tuberculosis had been a serious problem.

Phenomenal accomplishments in tuberculosis eradication have been achieved where little or no B.C.G. has been used including Iceland, Hawaii, and the Netherlands. In countries which have employed B.C.G. extensively, including Denmark, Norway, and Sweden, marvellous results have been achieved, but together with B.C.G. they have employed the same fundamental methods.

Bacteriological investigations have revealed that cultures designated B.C.G. were not composed of just one, but of multiple bacterial forms, some of which were definitely invasive for animal tissues. No two cultures were alike. Evidently different mutants and changes had occurred in each of the cultures studied.

Apparently mutants produced destructive disease in animals on deficient diet, in those which were silicotic, and in at least 2 species of normal animals. In humans these mutants sometimes caused lesions

at the site of administration and of regional lymph nodes, as well as other organs, and death in at least a few cases. Calmette is quoted as having repeatedly warned that no living organism capable of producing tubercules in animal tissues should be administered to people. Even if methods of preventing mutation in cultures have been or can be devised, there is no assurance that it will not occur after the living organisms are introduced into human tissues.

Finally it is emphasised that allergy to tuberculoprotein is not an indication of immunity but is prerequisite to the development of clinical tuberculosis.

Long-term Effectiveness of B.C.G. Vaccination in Close Contact with Infectious Tuberculosis. LORBER, J., & MENNEER, PEGY C. (1959). *Brit. med. J.* June 6th, 1959. Pp. 1,430-3.

While it has been demonstrated that B.C.G. vaccination can prevent tuberculosis, there have been in this country no reports so far on the long term effectiveness of B.C.G. vaccination of in-contacts. This paper reviews the results of B.C.G. vaccination of 267 children aged 2 years or less who were in close contact with cases of tuberculosis and who remained tuberculin negative 6 weeks after segregation from contact. Of the 267, 261 were traced 5 years or more after vaccination. There were no deaths from tuberculosis; only 2 had minor clinical symptoms associated with tuberculous lung lesions which healed by calcification, and one other had a calcified lung lesion. Four which were tuberculin positive after vaccination reverted and became tuberculin negative.

The household contacts against whose infection these children were vaccinated with B.C.G. were kept under observation; at the end of the period 15.7 per cent. had died of tuberculosis and 11.3 per cent. still had active disease.

No comparable controls in the form of unvaccinated children are available so it cannot be shown conclusively that B.C.G. vaccination prevented tuberculosis in this group of infants. It is, however, contended that the results are highly suggestive that B.C.G. vaccination did in fact protect the infants against the infection to which they were exposed in their own homes.

B.C.G. Sarcoidosis. ELLMAN, P., & ANDREWS, L. G. (1959). *Brit. med. J.* June 6th, 1959. Pp. 1433-5.

In December, 1950, a 14-year-old girl was vaccinated with Danish B.C.G. as a Mantoux-negative school-leaver. In February, 1951, she was Mantoux positive. In July, 1957, her Mantoux reaction had become negative and a chest X-ray showed reticular mottling. The patient was asymptomatic. Hospital investigation including liver biopsy established a diagnosis of sarcoidosis. No active treatment was given and she returned to work in October, 1957. By December, 1957, chest X-ray films showed obvious evidence of resolution and by September, 1958, the chest X-ray film was within normal limits. The tuberculin test was once again positive.

The time interval between vaccination and the development of sarcoidosis is thought to be too long for vaccination to be regarded as the cause of sarcoidosis.

It is suggested that if she had not been vaccinated she might have developed tuberculosis instead of sarcoidosis.

For and Against B.C.G. ANON. (1959). *Brit. med. J.* Editorial. June 6th, 1959. 1460-1.

This editorial reviews the position in regard to B.C.G. and seeks the answer to the question, " Where lies the truth in regard to B.C.G.?"

Unfortunately there is no test comparable to those applicable to diphtheria and tetanus toxoids or to pertussis and poliomyelitis vaccines. All that is proved beyond doubt is that satisfactory B.C.G. vaccination results in tuberculin allergy. The relationship between allergy and immunity remains complicated and is still obscure. If vaccinated people in a community have a lower incidence of tuberculosis than non-vaccinated, this is not, say the antagonists, proof that they escaped infection because of their vaccination. Nor can its advocates provide this proof, though they accept the implication that B.C.G. has protected against infection. On one thing both parties agree—that general measures of hygiene, and scrupulous care in case finding, segregation, and therapy are of prime importance.

The editorial then discusses the papers by Anderson and his colleagues and that by Lorber and Menneer. The paper by Anderson and his colleagues may not convince the advocates of B.C.G. vaccination, though the weakness of the evidence for it is revealed in the article by Lorber and Menneer who point out that " as there were no comparable controls it cannot be shown conclusively that B.C.G. vaccination prevented tuberculosis in this group of infants. Nevertheless the results are highly suggestive that this, in fact, is the case." It is the highly suggestive results which have been consistently obtained by the advocates that have encouraged them to pursue their work. It is the lack of conclusive proof that provides the antagonists with their ammunition.

The safety of B.C.G. is of paramount importance. Though Anderson and his colleagues have cast doubt on this, the fact remains that so many millions of people have been given B.C.G. and there have been so few fatalities (less than half a dozen recorded) that it is clear the risk of progressive tuberculosis in consequence of vaccination is vastly less than, for example, the risk of acquiring poliomyelitis after poliomyelitis vaccine.

Some ill effects from B.C.G. vaccination have been reported, but these can virtually be reduced to zero.

Any doctor when asked by parents if their children should received B.C.G., must consider very carefully the implications of denying them this measure. If vaccination is not done in infancy, it should be done before the onset of puberty and should therefore be offered between 10 and 12 years. This is better than leaving it until school-leaving age, as is the present practice, for puberty adds to the hazards of tuberculosis.

Though the net is closing around tuberculosis there still remains a need for B.C.G. vaccination. First, infection is more likely nowadays to come

from an unsuspected than a known source and is therefore more difficult to prevent. Second, infants resist tuberculosis poorly. Third, once a person has been infected it is impossible to be sure that endogenous reactivation may not occur even after many years of apparent "cure" and despite the excellent results obtained with isoniazid in therapy.

G. F. B.

Hypertrophy, Cysts and Abscesses of the Prostate in the Dog (*translated title*). ROSSNER, J. (1958). *Tierärztl. umsch.* **13.** 12.

The author recommends the rupture of prostatic cysts by the perineal rather than by the rectal route, except in certain circumstances. One case is detailed where, following electrocautery of a hypertrophied prostate gland, a prostatic cyst formed which had to be ruptured by rectal puncture and then treated on three occasions with penicillin before final shrinkage occurred.

Prostatic abscesses, it is recommended, should also be removed perineally, in so far as thickening of the pararectal region can be determined. Where, following rectal examination, thickening is not recognisable, laparotomy is necessary in order to open and eventually partially to resect the abscess capsule. Should the inner surface of the cavity fully coagulate, the abdominal cavity may be closed, otherwise drainage must be arranged.

Patients with prostatic cysts and abscesses risk the development of coprostatic toxicity and uraemia, and should be operated on at an early date.

In 80 per cent. of operations for perineal hernia the prostate gland was clearly enlarged, and it is suggested there is a fundamental connexion between prostatic hypertrophy and perineal hernia. The hypertrophied prostate was invariably treated by electro-cautery regardless of whether it was in the hernia or in its normal physiological position. Apart from one detailed case, no hernias recurred.

The Bacterial Flora of the Vagina of the Healthy Cow in Relation to the Oestrous Cycle, Stage of Pregnancy, Age and *p*H Value (*translated title*). TAUBRICH, F. (1958). *Zbl. vet.* **v.** 373.

Using a special sampling technique it was determined that bacteria are present in the fornix and vestibulum vaginae of healthy cattle; 108 cattle from three centres served as material. About 20 per cent. showed no organisms. Of the remaining animals about 65 per cent. showed α-haemolytic streptococci, 40 per cent. micrococci, 14 per cent. coliforms, 7 per cent. diphtheroids and 2 per cent. anthracoid organisms.

The streptococci comprised *Str. acidonimus* 87 per cent., enterococci 7 per cent. (serologically Group D), *Str. salivarius* and *Str. uberis*. All the micrococci were coagulase negative and non-haemolytic, mainly *M. aurantiacus, M. epidermidis, M. albus* and *M. candidus*. The coliform organisms belonged to the Escherichia group but they were not often present. Very few diphtheroid and anthracoid organisms were encountered. The vaginal flora of the cow did not show any correlation whatever with *p*H, age or stage of the sexual cycle.

Investigations into the Persistence of the Agglutination Titre of Young Cattle Vaccinated against Contagious Abortion (*translated title*). GRAMATZKI, H., & TEUTE, H. W. (1958). *Berl. Münch. tierärztl. Wschr.* **71.** 323.

The agglutination test for abortion was performed on 5,250 blood samples taken from 270 heifers which had been vaccinated with the Strain 19 vaccine. A similar number of cattle were vaccinated at the ages of 5, 6, 7, 8 and 9 months old. The initial titre was determined for a representative sample, and then blood sampling proceeded monthly until first calving.

It was shown that in many cattle a positive reaction still persisted at 18 months old (19.5 per cent. positive, 35.9 per cent. doubtful); at 24 months, 76.2 per cent. reacted negative, 19.5 per cent. doubtful and 4.3 per cent. positive. From the 31st month none were positive but 7.1 per cent. were still doubtful.

Occasional animals, which had become negative reactors, later had temporary positive titres of 1 : 80 to 1 : 1280. In general, those animals vaccinated at 5 months were quickest to become negative to the agglutination test. The examinations are being continued.

Septicaemic Listeriosis in New-Born Lambs (*translated title*). SANDVIK, O., MOLMEN, K., & KVAAL, M. (1958). *Nord. vet. med.* **10.** 17.

The report describes a probable outbreak of enzootic septicaemia in new-born lambs caused by *Listerella monocytogenes*. Forty-nine ewes had a total of 75 lambs; 29 lambs became ill at 3 to 5 days old and all showed similar symptoms (not detailed) leading to rapid prostration. The temperature rose to 41 to 41.3° C. (105.8 to 106.3° F.). All but 2 of the lambs were treated with antibiotics (250 mg. streptomycin and 300,000 units penicillin parenterally) and after 24 hours the majority showed no symptoms. All recovered except for the 2 untreated lambs, which died 48 hours after the onset of illness.

Post-mortem lesions were confined to the liver (numerous whitish necrotic nodules uniformly spread throughout the tissue) and spleen (enlarged and swollen) apart from a generalised hyperaemia. Cultures from liver, spleen and blood grew an organism identified as *L. monocytogenes*. *In vitro* tests for sensitivity showed that streptomycin was most effective, followed by tetracycline group members. Penicillin was less effective. Investigation as to the epizootiology revealed that in previous years several ewes had died during pregnancy exhibiting symptoms similar to the encephalitic form of listeriosis. *L. monocytogenes* was isolated from faeces taken from the sheep pen. The organism was found to survive at least 3 months in faeces. A. D. W.

REPORTS

Department of Agriculture, Cyprus: Annual Report of the Chief Veterinary Officer for 1957.

The Government veterinary service in Cyprus is a branch of the Department of Agriculture and deals mainly with disease control. Although the chief veterinary officer, Mr. A. Orhan, touches briefly on

animal husbandry topics in his Report, the impression given is that responsibility for this aspect of the livestock industry rests with a separate Animal Husbandry Section of the Department.

The livestock on the island consists mainly of sheep (about 380,000), goats (159,000) and donkeys (42,000). There are also some 30,000 cattle, 39,000 pigs, 7,000 mules and 2,500 horses.

Animal Health. During the year two diseases in particular—sheep pox and foot-and-mouth disease—were extremely troublesome and placed a heavy burden on the small veterinary branch.

The source of the foot-and-mouth outbreak, the first in Cyprus for 40 years, could not be traced. Cattle, sheep, goats and pigs were all affected and although vaccination of all the cattle on the island with a type A tissue vaccine obtained from Italy effectively checked the disease in that class of livestock, hopes that spread, in the other classes, would subsequently cease were not substantiated. By the year's end the disease had flared up in them and in spite of quarantine measures was spreading in several areas. Plans were in hand for a pilot trial on sheep and goats of an egg-attenuated virus vaccine from Israel.

Sheep pox had first been detected late in 1956. In the spring of 1957 virtually all the sheep and lambs on the island were vaccinated, the majority with a subcutaneous aluminium gel vaccine prepared locally from a Rumanian strain of virus obtained from Lebanon and Syria. Over 500,000 animals were vaccinated in 7 weeks but the campaign lost some of its force by the failure of some sheep owners to co-operate in the concomitant quarantine measures. Vaccine reactions were variable in different flocks and in spite of a repeat vaccination on some 380,000 sheep in September/October the disease was still present in certain areas at the close of the year. As glycerine-saline vaccine administered intradermally appeared to give a stronger immunity, it is proposed to use this vaccine and route in future.

In addition to these vaccinations the customary annual vaccination of all sheep and goats against anthrax was carried out: some 680,000 animals were immunised. This disease, once very troublesome on the island, is now well in check.

Largely because of the veterinary staff's unavoidable preoccupation with sheep pox and foot-and-mouth disease and the unco-operative attitude of some poultry rearers, Newcastle disease once again became a serious problem; it spread rapidly over virtually the whole island causing severe damage to village flocks and seriously threatening the growing poultry industry. Nearly 300,000 birds were vaccinated as part of the control measures.

During the past few years there has been a spectacular expansion in the broiler industry in Cyprus, many new farms having been started to handle this business. Fortunately they were kept free of Newcastle disease; coccidiosis, chronic respiratory disease, and infectious coryza were, however, responsible for losses in them.

Parasitism was widespread, outbreaks of parasitic gastro-enteritis and coccidiosis in sheep and goats being numerous and tick and lice infestation heavy. Hydatid disease is common in both animals and human beings, and appears to be on the increase. District Development Committees issue free to dog-owners large quantities of taeniacide drugs but the Report stresses that unless firmer steps are taken for the control of stray dogs, which have increased alarmingly during the last few years, and improvements in rural slaughter are effected and the present public apathy to the problem changed, little reduction in the disease incidence can be expected. Fascioliasis was prevalent in several districts.

Other conditions encountered included piroplasmosis, blue tongue, enterotoxaemia, salmonellosis (*Salmonella typhimurium*) and abortion in sheep, pregnancy toxaemia, mastitis, contagious ophthalmia and verminous pneumonia in goats, and fowl typhoid, neurolymphomatosis and spirochaetosis in poultry.

The island remained free of bovine tuberculosis, brucellosis and rabies. Cyprus has been commendably free of rabies for over 45 years, and strict quarantine measures are taken against its reintroduction.

At the laboratory some 4 million doses of anthrax, sheep pox, fowl pox and Newcastle disease vaccines were prepared and over 5,000 diagnostic specimens examined.

Animal Husbandry. In the words of the Report, "the general standard of animal husbandry among stock breeders is still very low and efforts made towards the improvement of local breeds by the introduction of exotic breeds are severely handicapped. Unless the stock breeders attain a knowledge of animal husbandry comparable with the one required for the maintenance of exotic breeds, no success will ever be obtained." Most notable, however, has been the growing interest in the broiler industry on the island and there has been a large increase in imports of day-old chicks, mainly from Israel, to meet its needs.

A few Saanen goats were imported from Holland and some Chios and Sarda sheep from Rhodes and Sardinia respectively. District Development Committees make valuable contributions towards livestock improvement by subsidising the purchase of anthelmintics and insecticides, the construction of piggeries, sheep pens, poultry houses, manure pits and sheep dipping tanks, and also the purchase of improved type goats and ram-lambs.

Exports. No permits were issued for the export of meat-producing animals and although export conditions on mules and donkeys were relaxed, only 186, to Greece and Lebanon, were taken out. Cyprus has long been famous for its mules and donkeys and was in fact the main supply centre for the Near East. For various reasons trade in these animals, both external and internal, has suffered a sad reverse in recent years, local interest has waned and breeding diminished to such an extent that if the present position continues there is a risk that even the livestock section of the Department of Agriculture will find it hard to get suitable jack donkeys for stud.
—W.E.L.

(*Continued at foot of col.* 1, *page* 682)

THE FIRST NUMBER WILL BE PUBLISHED IN JANUARY 1960

Research in Veterinary Science

Scientific Editor: H. E. Harbour.

Assistant Scientific Editors: J. B. Brooksby, D. L. Hughes.

Executive Editor: Charles Mitchell.

★ **Editorial policy** will be to accept significant original contributions to knowledge of animal health and disease. Papers will be of the highest scientific quality and must have a direct bearing on the subject: authors need not necessarily be veterinary surgeons. The standard of the journal is intended to be such that it will be an indispensable addition to every scientific library. Its scope will be wide, and the sole criteria for publication will be the intrinsic interest and value of the work described, and the quality of its presentation.

★ **Contributions** are invited from workers of all nationalities in veterinary and allied fields. Papers must be written in English. The closing dates for the first two numbers are October 23rd and January 25th. Papers should be addressed to: The Scientific Editor, Research in Veterinary Science, 7 Mansfield Street, Portland Place, London, W.1. A pamphlet giving directions to authors as to presentation, etc., is available on request.

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The Victoria Veterinary Benevolent Fund

A Meeting of the Council of the Victoria Veterinary Benevolent Fund was held at 10, Red Lion Square, London, W.C.1, on July 15th, when the following members were present:—

Mr. H. W. Dawes (President) in the chair, Messrs. G. Atkinson, E. Clark, Major J. J. Dunlop, Mr. R. C. U. Fisher, Mrs. D. I. Glover, Mr. A. A. Lamont, Professors R. Lovell, J. McCunn, Mrs. E. I. Thomson, Miss V. Tillemont-Thomason, Captain Wm. Watt, Mr. E. Wilkinson, Major W. H. Wortley.

In attendance: Mr. C. W. Francis, Secretary.

Welcome to New Member

Before proceeding with the business, the President, on behalf of the members, extended a warm welcome to Mr. E. Wilkinson, M.R.C.V.S., the newly elected representative of the Society of Practising Veterinary Surgeons.

Minutes

The Minutes of the previous meeting, held on April 16th, 1959, having been published in THE VETERINARY RECORD, were taken as read and signed as correct.

Apologies for Absence

Apologies for absence were reported from Messrs. E. P. Barrett, H. E. Bywater, J. A. Flynn, G. N. Gould, L. E. Hughes, J. M. Ingram, D. H. L. Madden, Professor A. Messervy, Major C. W. Townsend, Professor W. L. Weipers, Captain A. Whicher, and Dr. W. R. Wooldridge.

Correspondence

The secretary reported:—

(a) That the following nominations to Council had been received during the quarter:—

(i) North of Ireland Veterinary Association—Professor H. G. Lamont.

(ii) Society of Practising Veterinary Surgeons—Mr. E. Wilkinson, in the place of Mr. G. M. G. Oliver, resigned.

(iii) Scottish Metropolitan Division—Mr. H. M. Wilson, to succeed Professor W. M. Mitchell, retired.

(b) *James Harrison Bequest.* That as instructed at the previous meeting, he had written to Messrs. Tomkins & Bowes, solicitors, for further information regarding certain land which it was suggested should be disposed of, and read their reply of July 13th.

It was resolved that the offer of £165 for the land opposite Oak Cottage, Bexhill-on-Sea, be accepted, but that professional advice be sought in regard to the land at Ditchling. The secretary was instructed to write to Messrs. R. H. & R. W. Clutton of East Grinstead.

Investments

(a) The treasurer reported that, with the concurrence of the executive committee, he had caused the balance standing in the donations account, amounting to £434 15s., to be invested in the purchase of £546 14s. 7d. 3½ per cent. treasury stock, 1979/81.

It was resolved that the action of the treasurer be approved.

(b) The secretary reported that as authorised at the last meeting, the Officers had effected the transference of the balance standing in the Post Office deposit account, amounting to £757 10s. 4d., to the London Trustee Savings Bank, *viz*:—

Ordinary Department a/c, No. C3387: £57 10s. 4d., bearing interest @ 2½ per cent. p.a.

Special Investment Department a/c No. B222: £700, bearing interest @ 4 per cent. p.a.

(c) *Equities.* The President reported that at the close of the Annual General Meeting on June 3rd, 1959, your executive committee specially met to discuss the suggestion made at that meeting that equities should be included in the Fund's investments.

After prolonged deliberation, your committee unanimously agreed to recommend to Council that no alteration be made in the Council's present investment policy for the time being.

It was resolved that the proposal raised at the Annual General Meeting be kept under review but that for the time being, in view of the prospects of a general election, the present investment policy of the Council be continued.

Accountant's Report

The secretary read the following report, which was

Reports—*Concluded.*

The Grassland Research Institute. Experiments in Progress Number 11, Annual Report for 1957-8.

In an age when so much reliance is placed on artificial feeding materials it is refreshing to know that there is active research carried out on grass, that most essential of all natural animal foods.

The Grassland Research Institute has celebrated its move to Hurley by the publication of its eleventh progress report (107 pages, 30 publications 1957). The range of subjects studied is wide, and, if the research is somewhat biased towards practical and/or applied aspects this does not detract from the excellent material published.

The Director's preface is most informative and the first sentence in the penultimate parapragh is a clear comment on how this valuable branch of agriculture can best be developed: "Modern grassland and animal research demands teamwork on the widest possible basis and our own particular studies would be incomplete if we did not collaborate with other Institutes both in this country and overseas."

The widest possible basis must be taken to include not only research institutes, but farmers, veterinary research workers and all kinds of agriculturists who are continually on the spot, and who, by careful personal observation, can make many valuable contributions to the broad science of agronomy.—D.G.H.

approved, a vote of thanks being accorded to the respective donors:—

Since the previous meeting, the following donations have been received:—

	£ s. d.	£ s. d.
Association of Veterinary Officers, Ministry of Agriculture, Northern Ireland		10 0 0
Crufts Dog Show		13 2 6
Gibson, A. C.		9 6
Guildford Horse Show		2 2 0
Herts. & Beds. Veterinary Society		11 0 0
Lancashire Veterinary Association		10 0 0
Royal (Dick) School, Veterinary Students Committee		5 0 0
Scottish Metropolitan Division		10 0 0
Serth, G. W.		5 12 6
Whicher, A.		1 1 0
Collecting Boxes		
Association of State Veterinary Officers	10 0 0	
Dumfries & Galloway Division	6 3 2	
Essex Veterinary Society	5 11 6	
Midland Counties Veterinary Association	13 17 9	
Scottish Branch B.V.A.	1 15 9	
Scottish Metropolitan Division	3 0 0	
Western Counties Veterinary Association	4 4 6	
		44 12 8
		£113 0 2

Cases

The following cases were submitted for review:—

No. 132. M.R.C.V.S., invalid. Three children, all married and unable to help.

It was resolved that the present grant of £2 per week made to his wife be continued for 12 months, and that the offer of a member of Council to visit this case, be warmly accepted.

No. 240. Daughter of late member, aged 63. Weekly income: N.I. Pension £2 10s. and £1 from a legacy. In view of her increased rent, *it was resolved*

That the grant for the ensuing year be increased to £2 per week and that a local member of the profession be asked to visit this case and submit a report.

No. 265. Widow, aged 69. Son, aged 32, daughter, aged 38, Ward Sister, who contributes towards the home.

It was resolved that the grant of £2 per week be continued for one year, and that a local member of the profession be asked to call on this case and submit a report.

No. 294. Daughter of late member, aged 60 on July 16th, 1959. Report from a member of Council on her recent visit to this recipient was read.

It was resolved that as this recipient will be entitled to receive the N.I. Pension as from July 16th, the grant in this case be discontinued at the end of July.

No. 304. M.R.C.V.S., aged 61. Ill health. In view of his financial circumstances, *it was resolved*

That the grant of £2 per week be continued for a further twelve months.

No. 305. Widow, aged 62. Two sons and three daughters. All married, except youngest son, aged 33, for whom she keeps house.

It was resolved that a local member of the profession be asked to call on this case and submit a report; and that in the meantime the grant of £2 per week be continued.

No. 320. Widow. Had accident last year when she fractured a thigh. *It was resolved*

That the grant of £2 per week be continued until the next meeting by which time a report on this case from a member of Council will be available.

No. 325. Widow, aged 54. Three sons, 20 (articulated pupil), 27 and 31 (both married). In view of this recipient's letter, dated July 5th, it was agreed that the grant of £2 per week be continued for three months, when the case be further considered.

No. 328. Widow, aged 55. Three sons and three daughters. Grant of 30s. per week towards education of son, aged 11 years. *It was resolved*

That the grant be continued for a further year.

Special Case. No. 284. M.R.C.V.S., aged 76. Married. Receiving help from the National Assistance Board. Submits application for a grant to purchase clothing. *It was resolved*

That a special grant of £25 be made in this case; and that subject to receiving the approval of the National Assistance Board, the Fund make him a small allowance of 10s. 6d. per week.

New Case. No. 328. Widow, aged 66. Income £178 per annum from a Trust. Rent £3 3s. 0d. per week.

It was resolved

(a) That this case be referred to the Executive Committee, with power to act;

(b) That a member of Council's offer to visit this applicant be cordially accepted, and that her report be submitted to the Executive Committee.

Date of Next Meeting

It was agreed that the arrangements of the next meeting be left in the hands of the President and Members of the Executive Committee.

News and Comment

COMPLETE ATTESTATION IN WALES AND SCOTLAND

A recent joint announcement by the Minister of Agriculture and the Secretary of State for Scotland makes the whole of Wales and the whole of Scotland attested areas on October 1st. Commenting on the steady progress of tuberculosis eradication in Wales, *The Farmers Weekly* writes:—

"Farmers in Wales were among the first to see the advantages of the TB eradication scheme. And this foresight has paid off handsomely, not only in direct financial returns, but also in far-reaching improvements in livestock management and animal health.

"Since 1950, for instance, they have received over £10,000,000 in bonus payments alone. They have seen the life of their dairy cows lengthened with a consequent increase in milk production. And their export trade in attested stores and replacement calves has advanced steadily year by year.

"From the cash-in-pocket point of view, therefore, they have been on a 'winner.' But they are also gaining tremendous benefit from the closer co-operation that has grown up between the farmer and the veterinary services.

"Before the TB drive began in 1935, a visit from a Ministry vet. usually spelt trouble. But since then the Welsh farmer in particular has learned to regard the official vet. as an expert who is eager to advise and help.

"Moreover, this closer link has resulted in a more realistic approach to the prevention and control of other diseases apart from TB.

"'In fact,' says Mr. A. G. Beynon, regional veterinary officer for Wales, 'this changed attitude has opened up an entirely new field in preventive medicine.'

"And in the light of past experience, Mr. Beynon

does not anticipate any serious difficulties in keeping the Principality free of TB.

"'We have had wonderful co-operation from the Welsh farmers,' he says. 'Compulsion has only had to be used in very rare cases.

"'Wales is an area of small farms and in some quarters it is regarded as being not quite so progressive as other parts where there are bigger units. But, in fact, the response to the TB campaign has been really good and could be an example to some others.

"'There have been no major problems in the past. Farmers have carried out the regulations properly.

"'The success of the scheme in Wales is an achievement they can all be proud of.'"

To celebrate complete attestation in the Principality the Welsh branch of the B.V.A. has arranged a banquet in Cardiff, as already mentioned in these columns, for the evening of October 1st.

THE CENTRAL VETERINARY SOCIETY

Having regard to the fact that the Share-Jones lecture and the current meeting of the Central both take place at the Royal Veterinary College on the same day, the former at 5 p.m., it has been decided to delay the start of the Central meeting until those Fellows who have attended the lecture are free. An official notice giving the Agenda and other details of the Central meeting is published elsewhere in this issue.

SPECIAL UNIVERSITY LECTURE IN HORTICULTURE

A lecture on Recent Work on the Electron Microscopy of Viruses, by Dr. Kenneth M. Smith, C.B.E., F.R.S., Director of the Virus Research Unit, Agricultural Research Council, Cambridge, will be delivered at the University of London, Senate House, at 5.30 p.m. on October 29th, 1959. The chair will be taken by Professor H. W. Miles, D.SC., Professor of Horticulture in the University of London. The lecture is addressed to students of the university and to others interested in the subject, and admission is free, without ticket.

THE COLONIAL VETERINARY SERVICE

New appointments. F. W. Lund, VET.DIP. (COPENHAGEN), veterinary officer, Northern Region, Nigeria. R. W. Boyd, B.V.SC. (LIVERPOOL), M.R.C.V.S., veterinary officer, Northern Rhodesia.

UNIVERSITY NEWS

Bristol

The following is the pass list for the examinations for the degree of B.V.Sc.:—

First Examination (biology, chemistry, physics)

Kaminjolo, James S.; Roberts, Charles J.

In Chemistry, completing requirements: Drew, Christopher I.

Second Examination, Section III (pharmacology)

Barker, John M.; Bell, Brian J.; Clarke, Zandra E. Y.; Ford, Christabel J.; Stuart, Anthony N.; Whymark, Thomas R. C.

Third Examination (pathology, parasitology, animal husbandry II)

Farman, Roy S.; George, David B. L.; Sanders, Kenneth J.; Stoker, John W.; White, Keith B.

In pathology and parasitology: Edwards, Hugh G.

R.C.V.S. OBITUARY

We record with regret the deaths of the following members of the profession:—

AITKEN, William, Eden Cottage, Portsoy, Banffshire, Captain, R.A.V.C. (T.F. Res.) (Retd.). Graduated December 17th, 1910, at the Royal (Dick) Veterinary College, Edinburgh. Died September 4th, 1959, aged 70 years.

SOWERBY, Harry Livingstone, Walmsley Street, Hull, Yorks. Graduated May 17th, 1911, at the Liverpool Veterinary School. Died September 12th, 1951, aged 74 years.

Supplementary Veterinary Register

MARKING, Robert Arthur, 2, Morocco Street, London, S.E.1. Died August 10th, 1959.

SHIPSTONE, Charles Henry, 147, High Street, West Wickham, Kent. Died August 25th, 1959, aged 58 years.

WRIGHT, Noah Davy, Rosslyn House, Yoxford, Suffolk. Died August 14th, 1959, aged 73 years.

PERSONAL

Mr. Horace Thornton, chief veterinary officer for Newcastle, is to visit Yugoslavia, at the request of the country's Government, to study the organisation of meat production and meat quality control and also to deliver a series of lectures at the Institute of Meat Technology in Belgrade.

Births

HIME.—On July 18th, 1959, to Valerie, wife of Malcolm Hime, M.R.C.V.S., of Braintree, Essex, a daughter, Caroline Elizabeth.

SCOTT.—On September 6th, 1959, at the Princess Elizabeth Hospital, Nairobi, to Joan, wife of Gordon Scott, PH.D., M.SC., M.R.C.V.S., of the East African Veterinary Research Organisation, Muguga, a daughter, sister for Ann and Andrew.

Marriages

ARCHBOLD—JACKSON.—The marriage took place on Wednesday, September 16th, 1959, at St. Michael's Church, Hawkshead, between Casson Archbold and Jane Jackson, B.S.V.M.S., M.S.R.C.V.S.

FRANCIS—URMSTON.—On August 29th, 1959, Philip G. Francis, B.V.SC., M.R.C.V.S., of Sleaford, Lincolnshire, to Nancie Urmston of Lowton-St.-Mary's, Lancashire.

GRAHAM—BUSBY.—At Reigate on September 19th, 1959, Andrew A. H. Graham, B.D.S., L.D.S., R.C.S., elder son of Mr. and Mrs. A. M. Graham, Woodcote, Oxon., to Jennifer, daughter of Mr. and Mrs. W. Busby, Copthorne, Sussex.

WATERWORTH—MEARS.—On September 19th, 1959, Hazel Mears, B.V.SC., M.R.C.V.S., daughter of Mr. and Mrs. G. E. Mears, 91, Leonard Street, Derby, to James Waterworth, B.V.SC., M.R.C.V.S., son of Mr. and Mrs. H. L. Waterworth, "Stoneacre," Dalton, Nr. Wigan, at St. Michael and All Angels Church, Dalton.

WILSON—HURST.—On August 24th, 1959, Stuart R. Wilson, B.V.M.S., M.R.C.V.S., of Manchester, to Veronica Hurst, of Canton Cardiff, at Llandaff Cathedral.

COMING EVENTS

September

29th (Tues.). Meeting of the B.S.A.V.A. Midland Region at the George Hotel, Bird Street, Lichfield, 7.30 p.m.

30th (Wed.). Meeting of the Southern Counties Veterinary Society at the Royal Hotel, Winchester, 7.30 p.m.

Meeting of the South-east Midlands Veterinary Association at Franklin's Gardens Hotel, Northampton.

30th September, 1st and 2nd October (Wed., Thurs. and Fri.). Quarterly Meeting of Council, R.C.V.S.

October

1st (Thurs.). Banquet of the Welsh Branch at the City Hall, Cardiff.

Share-Jones Memorial Lecture on "The Skin of the Dog," by Mr. H. V. Hughes at the Royal Veterinary College, Camden Town, N.W.1, 5 p.m.

Meeting of the Central Veterinary Society at the Royal Veterinary College, Camden Town, N.W.1, about 6 p.m.

Autumn Meeting of the North of Scotland Division in the Drunossie Hotel, Inverness, 2.30 p.m.

7th (Wed.). Autumn Meeting of the Society of Women Veterinary Surgeons at the Guide Dogs for the Blind Association Training Centre, Warwick New Road, Leamington Spa, 2.30 p.m.

9th (Wed.). Meeting of the Lincolnshire and District Division at the Berkeley Hotel, Doncaster Road, Scunthorpe, 2.15 p.m.

Meeting of the North of Ireland Veterinary Association at the Whitla Medical Institute, College Square North. Belfast, 7.30 p.m.

Meeting of the Midland Counties Veterinary Association at the Regent Hotel, Leamington Spa, 2.30 p.m.

13th (Tues.). Annual Dinner-Dance of the Mid-West Veterinary Association at the Berkeley Café, Clifton, 7.15 p.m.

General Meeting of the Society of Practising Veterinary Surgeons at the Blossoms Hotel, Chester, 7.30 p.m.

15th (Thurs.). Meeting of the Herts. and Beds. Veterinary Society at the Peahen Hotel, St. Albans, 7.30 p.m.

16th (Fri.). Meeting of the Ayrshire Veterinary Association in the Hannah Dairy Research Institute, 2.30 p.m.

22nd (Thurs.). General Meeting of the South Eastern Veterinary Association at the Royal Star Hotel, Maidstone, 2.30 p.m.

24th (Sat.). Meeting of the B.S.A.V.A. North West Region at the Swan Hotel, Chester, 7.30 p.m.

27th (Tues.). Meeting of the Society for the Study of Animal Breeding at the Royal Society of Medicine, 1, Wimpole Street, London, W.1, 11.30 a.m.

28th (Wed.). Meeting of the Dumfries and Galloway Division at Castle Douglas.

November

4th, 5th and 6th (Wed., Thurs. and Fri.). B.V.A. Committee and Council Meetings in London.

B.V.A. COMMITTEE AND COUNCIL MEETINGS IN LONDON

Tuesday, November 3rd—at 7, Mansfield Street

5.00 p.m. Finance Sub-Committee.

Wednesday, November 4th—at 7, Mansfield Street

10.00 a.m. Parliamentary and Public Relations Committee.
11.30 a.m. Farm Livestock Committee.
2.15 p.m. Small Animals Committee.

Thursday, November 5th—at 7, Mansfield Street

10.00 a.m. Veterinary State Medicine Committee.
11.30 a.m. Home Appointments Committee.
2.30 p.m. General Purposes and Finance Committee.

Friday, November 6th—at Connaught Rooms, Great Queen Street, London, W.C.2

10.15 a.m. Council Meeting.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax

Cumberland. Park Gate Farm, Waverton, Wigton (Sept. 11); Fir Tee House, Seaville, Silloth, Carlisle (Sept. 21).
Derby. Pearsons Farm, The Griffe, Brassington (Sept. 21).
Dumbarton. Cairniedrouth Farm, Cardross (Sept. 17).
Kent. Mace Farm, Cudham, Sevenoaks (Sept. 14).
Norfolk. Hall Farm, Carbrook, Watton, Thetford (Sept. 11).
Northants. Hardwater Mill Field, Doddington (Sept. 14).
Salop. Heathbrook Farm, Wollerton, Market Drayton (Sept. 16).
Staffs. Bridge Farm, Wood Lane, Yoxall, Burton-on-Trent (Sept. 15).
Westmorland. Haybanks, Drybeck, Appleby (Sept. 17).
Wigtown. South Kildownan Farm, Stranraer (Sept. 14).

Atrophic Rhinitis

Suffolk. Lackford Manor, Lackford, Bury St. Edmunds (Sept. 15).

Fowl Pest

Bucks. Conns Farm, Cranfield, Bletchley (Sept. 15).
Essex. 1, Broad Road, Wickham St. Pauls, Halstead (Sept. 14); Northlands Farm, Dry Street, Langdon Hill, Laindon; Moorcroft Smallholdings, Daws Heath, Thundersley (Sept. 18).
Glouces. The Paddock, rear of Morning Star Inn, Hardwicke (Sept. 13); The Allotments, Hidcote Boyce, Chipping Campden (Sept. 15); Hillsdown, Aston Road, Chipping Campden (Sept. 19).
Kent. Kingsdown Farm, Wigmore, Gillingham (Sept. 11); Primrose Lodge, Blowerswood, Wigmore, Gillingham (Sept. 18).
Suffolk. Pricketts Hall, Bures (Sept. 18).

Sussex. High Street, Slinwell, Wadhurst (Sept. 18).
Warwicks. Wayside, Armscote, Stratford on Avon; Hill View, Armscote (Sept. 13); Southfields Farm, Ilmington, Shipston on Stour (Sept. 14); Honeysuckle Cottage, Armscote; White Gate Farm, Armscote (Sept. 15); Tredington Cross Roads, Halford, Shipston on Stour (Sept. 16).
Yorks. Farfield, Bilton Lane, Harrogate (Sept. 14); Village Farm, Old Bilton, Harrogate; Valley Farm, Bilton (Sept. 19); Gardeners Arms, Bilton, Harrogate; Bilton Dene Farm, Bilton (Sept. 21).

Swine Fever

Anglesey. Post Office, Garreg Lefn, Rhosgoch (Sept. 18); Graiglwyd Fawr, Valley, Holyhead (Sept. 19).
Bucks. The Piggeries, Bower Way, Chippenham, Slough; The Grange, Twyford (Sept. 16).
Cambs. 39, Hall Street, Soham, Ely (Sept. 14); Copley Hill Farm, Babraham (Sept. 18).
Ches. 33, Underwood Street, Dukinfield (Sept. 9); Summer Trees Farm, Kelsall (Sept. 14); Laburnum Farm, Turf Lea, Marple, Stockport (Sept. 15); Peartree Farm, Burwardsley; Chorley Green, Chorley, Nantwich; Parade Green Farm, Church Minshull, Nantwich; Well House Farm, Eaton, Tarporley (Sept. 17).
Derby. 36, Nook End Road, Heanor (Sept. 18).
Devon. Watering Farm, Otterton, Budleigh Salterton (Sept. 21); Ellicombe Farm, Morchard Road, Copplestone, Crediton (Sept. 22).
Dorset. Waddock Farm, Clyffe, Dorchester (Sept. 14).
Essex. Thelma, Main Road, Great Oakley, Harwich (Sept. 11); Ladderstile Farm, High Road, Epping (Sept. 14); Field at Junction of Maldon Road and Newhall Lane, Mundon, Chelmsford (Sept. 16); Mayo House, Ardleigh, Colchester (Sept. 21).
Glamorgan. Disgwylfa Farm, Creigiau, Cardiff (Sept. 17).
Kent. Beverley Dairy Farm, St. Stephens, Canterbury (Sept. 16); Lime Kiln Allotments, Wincheap, Canterbury; Maitland Farm, Wychling, Sittingbourne (Sept. 21).
Lancs. Park Street Piggeries, Poolstock, Wigan (Sept. 11); Crosse Hall Mill Farm, Chorley (Sept. 14); Morris Fold Farm, Chorley; 68, Halebank Road, Halewood, Liverpool (Sept. 17); Harrison House Farm, Leigh Road, Hindley Green, Wigan (Sept. 18); Cutler Hill Farm, Failsworth, Manchester (Sept. 21).
Leics. Chestnut Farm, Arnesby (Sept. 15).
Lincs. Grange Farm, Small End, Friskney, Boston (Sept. 14).
Norfolk. Fairview, Woodend Road, Heacham, King's Lynn (Sept. 11); Mill View, Yaxham, Dereham (Sept. 14); Home Farm, Cranmer, Fakenham (Sept. 15); Bungalow Farm, Barford, Norwich (Sept. 16); Mill Yard, Poringland, Norwich; Manor Farm, Stalham, Norwich (Sept. 21).
Northants. Twenty Foot Farm, Newborough, Peterborough (Sept. 21).
Notts. 209, Hartley Road, Radford, Nottingham (Sept. 16).
Oxford. Home Premises, Hogg Lane, Charlton, Banbury (Sept. 18).
Rutland. The Exeter Arms, Barrowden, Oakham (Sept. 21).
Salop. Nobold Grange, Nobold, Shrewsbury (Sept. 21).
Somerset. Hillside, Chilton Polden, Bridgwater (Sept. 11).
Staffs. The Piggeries, Back Amicable Street, Burslem, Stoke-on-Trent (Sept. 16); Wetley Abbey Farm, Wetley Rocks, Stoke-on-Trent; Orchard Farm, Mayfield, Ashbourne (Sept. 21).
Warwicks. The Buildings, Alcester Road, Stratford on Avon (Sept. 11); 294, Browns Lane, Allesley, Coventry (Sept. 18).
Yorks. Ash Tree Farm, Thernton, Bradford (Sept. 15); Nethergate, Westwoodside, Doncaster (Sept. 18); The Spires, Stockton, Rugby (Sept. 21).

Letters to the Editor

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

A Scale of Veterinary Fees

Sir,—You may recall that in May, 1958, I wrote to THE VETERINARY RECORD about the possibility of a scale of fees being drawn up to act as a guide to members in general practice. I felt then that this list would be an invaluable guide and one that was urgently required to enable some consistency in fees charged to be reached.

I felt so strongly on the matter that I offered to do all the work in introducing the scheme and I placed my proposals before the "appropriate committee." I was informed, however, that as the Society of Practising Veterinary Surgeons was already investigating the matter very fully, my efforts would be superfluous.

As my scheme, as proposed, would have been completed within 6 months of starting, with the complete results in the hands of every member of the British Veterinary Association, I respectfully submit that after 15 months the Society of Practising Veterinary Surgeons' results should be to hand.

There is a definite need for a comprehensive scale of fees adapted to different types of practices and areas of the country. Until an officially approved scale of fees is available which can be amended annually as circumstances warrant, and which can be made available to the National Farmers' Union and the general public for reference, any veterinary surgeon trying to adjust his fees to the rising cost of living is going to meet opposition from his clients. I appeal again to the B.V.A. to act in this matter, and to fellow general practitioners to let their opinions be known through THE VETERINARY RECORD.

Yours faithfully,
V. A. HARRISON.

Derwent,
Church Street,
Matlock.
September 11th, 1959.

Effect of Jet Noise on Animals

Sir,—Very large quantities of livestock of all species are now being carried by the international airlines, and this traffic is steadily increasing. Jet aircraft are not at present used, but they will be. In the meantime, livestock often encounter jet noise at close quarters at airports.

The airlines are in need of information and advice about the effects of high frequency sounds on the various animals concerned. I have been unable to discover any information on this subject and should be most grateful if any of your readers can help me.

Yours faithfully,
STELLA ST. JOHN.

Royal Society for the Prevention of Cruelty to Animals,
Airport Hostel for Animals,
London Airport.
September 19th, 1959.